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# **Soviet Military Operations in Afghanistan: Costs and Implications for the Economy**

**An Intelligence Assessment**

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*SR 80-10115CX*

*August 1980*

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# **Soviet Military Operations in Afghanistan: Costs and Implications for the Economy**

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**An Intelligence Assessment**

*Information available as of 30 June 1980  
was used in the preparation of this report.*

This assessment was prepared by [redacted]  
[redacted] the Military-Economic Analysis Center,  
Office of Strategic Research, and coordinated with  
the Southwest Asia Analytic Center, the Offices of  
Economic Research and Political Analysis, the  
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regarding this assessment are welcome and may be  
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**Soviet Military Operations  
in Afghanistan:  
Costs and Implications  
for the Economy**

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**Overview****Costs of Current Operations**

On the basis of the number and types of Soviet forces committed to Afghanistan and their operations for the first six months of 1980, we estimate that expenditures for these forces will make up a few tenths of a percent of total defense spending in 1980. If operations continue at their present pace through the end of the year, these expenditures will amount to about 5 percent of the total projected increase in Soviet defense spending between 1979 and 1980.

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Through June 1980 several factors combined to hold down the military outlays to an estimated 150 million rubles: operations were limited in area and scope, most logistical support was provided by land, regular army personnel replaced reservists, and the fighting did not require massive use of force or firepower.

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Other military costs that can be attributed to the activities in Afghanistan include the value of weapons and supplies for the Afghan Army, of Soviet equipment damaged or destroyed, and of ammunition expended. These costs have not yet been reflected in Soviet military outlays. We have only fragmentary information on which to base an estimate of these costs and consequently do not have a high confidence in the calculations. We estimate that the cost of ammunition expended and of equipment lost in the first half of 1980 is somewhere between 100 and 200 million rubles; we are unable to estimate the costs of supplying the Afghan Army.

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There have also been the indirect economic costs of Western sanctions imposed on the USSR after the invasion. These have caused localized disruptions in deliveries of supplies for civilian activities and have reduced feed supplies, forcing cutbacks in the livestock sector. To date, however, neither the diversion of resources to support the invasion nor the imposition of sanctions has affected the Soviet economy seriously.

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The human cost of the invasion cannot be estimated with confidence. A conservative estimate, based on fragmentary information, puts Soviet casualties at a minimum of 4,000.

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Our estimates of the costs of Soviet operations in Afghanistan are small when compared with such aggregate measures as total Soviet defense spending, military manpower, or GNP. Nevertheless, these costs apparently have exceeded Soviet expectations. Reportedly, the human and economic costs of the incursion have contributed to a reassessment by the Soviets of their position in Afghanistan. They have restructured their combat operations there, perhaps in part because of these costs.

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**Implications of Postulated Large-Scale Involvement**

If the current Soviet forces prove insufficient to stabilize Afghanistan politically and militarily, the Soviets would face a choice between a political compromise and an escalation of military operations. To evaluate the capability of the Soviet economy to support an escalation, we have estimated the economic effects of an increase in Soviet forces. Our calculations indicate that, in the near term, Soviet economic activity in general would not be affected significantly by large increases of military forces in Afghanistan.

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Even a force of 500,000 men—more than four times the size of the current force—could be fielded without a significant effect on the rate of growth of the Soviet economy through 1985. Expenditures for a force of this size, however, could add about one percentage point to the share of GNP going to defense through the mid-1980s, thus reducing the availability of economic resources for civilian uses—especially investment. Given the Soviet need for investment in key areas of the civilian economy, the long-term economic costs of such an escalation could be considerable.

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Moreover, a large-scale commitment to Afghanistan could have a disproportionate effect on specific sectors of the Soviet economy, notably transportation and energy, thus leading to further deterioration in overall economic performance. The Soviet railroad system is already operating at its maximum capacity, and large additional military requirements could disrupt the entire network. We estimate that the Soviets' supply of petroleum products is adequate for current operational demands, but higher force levels could increase the military's total consumption of fuel by as much as 10 percent. This would strain the civilian economy, which is already experiencing fuel shortages.

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Soviet economic conditions could deteriorate even further if an escalation in Afghanistan should elicit a strong response from the West and an intensification of military competition across the board. The economic

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denial measures imposed by the United States after the invasion, if maintained for prolonged periods and supported by other countries, could also have a substantial effect on the USSR. Soviet leaders would have to consider this possibility in making decisions on Afghanistan.

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The Soviet leaders know, as we do, that their economy in the aggregate is large enough to support a substantial increase of military forces in Afghanistan. They also are aware, however, that critical problems exist in their economy and that sizable escalation of the conflict in Afghanistan over the next three to five years—even if carried out gradually—would exacerbate these problems. The Soviets' actions to date suggest that political and military considerations have dominated their decisions on Afghanistan and that economic costs have been secondary. We cannot predict how they will weigh the economic costs of a continued occupation of Afghanistan against political and military factors. Nevertheless, the long-term economic effects of a lengthy, large-scale involvement are likely to become increasingly important in Soviet decisionmaking.

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**Soviet Military Operations  
in Afghanistan:  
Costs and Implications  
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**Background**

For more than 15 years the USSR has been engaged in a costly expansion and modernization of its armed forces.<sup>1</sup> Defense expenditures have increased since at least 1965 at a real average annual rate of 4 to 5 percent. Until recently these expenditures absorbed a relatively constant share of Soviet GNP—11 to 12 percent a year.

During the same period, Soviet economic growth has been slowing. In 1978 and 1979 the economy's performance was especially poor, with growth averaging only 2 percent a year. As a result, defense expenditures, which continued to increase at their historical rate, began to absorb an increasing share of the GNP. Moreover, prospects for future Soviet economic growth are not encouraging; a continued decline in the rate of growth—worsened by energy and labor shortages—is virtually inevitable through most of the 1980s.

It was against this backdrop—a steady increase in military expenditures and a continuing slowdown in economic growth—that the Soviets mounted the first military operation outside their borders in more than a decade: the invasion of Afghanistan. This paper examines the economic implications of the invasion and operations through the first half of 1980. It assesses their effect on defense expenditures and their other costs—military, human, and economic—in 1980, and then analyzes the cost and potential economic effects of several scenarios we postulated, ranging from a limited increase in current forces to a large-scale, protracted conflict. Finally, it assesses some effects that a long-term Soviet

involvement in Afghanistan might have on future defense spending and on economic performance. The findings of this paper are preliminary, given the fluid situation in Afghanistan and the many consequences of the occupation that cannot be costed with a high degree of confidence.

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The costs are presented in rubles to measure their effects on Soviet spending for defense and on the economy in general. The appendix contains a detailed presentation of the assumptions and the methodology of the analysis.

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**Current Operations and Their Costs**

In late December 1979, Soviet military forces invaded Afghanistan to install a new pro-Soviet prime minister and to bolster the ineffective Marxist regime that had been established after the revolution in April 1978. Initially, the minimum objectives of the Soviet forces were to consolidate control over major cities and to secure lines of communications. Although they did not mount continuous counter-insurgency operations, they conducted limited operations, including airstrikes, against rebel strongholds.

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By mid-January 1980 the Soviets had about 65,000 troops in Afghanistan,<sup>2</sup>

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Air support was provided by tactical aircraft, helicopters, and transports stationed inside the country and in neighboring military districts in the USSR. Supplies were delivered by rail to the Soviet border and from there by truck

<sup>2</sup> This figure includes only those forces stationed inside Afghanistan. The Soviets also have military personnel in military districts adjacent to the border who are supporting operations in Afghanistan or who appear to have been moved into the area as a result of the invasion. An estimate of the Soviet military forces committed to Afghanistan would include all the forces stationed in Afghanistan and some of the forces in adjacent Soviet territory.

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convoys to depots which were being developed in Afghanistan. [redacted]

operations through June 1980 in Afghanistan represent a few tenths of a percent of total spending for defense in 1980. [redacted]

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By the end of June 1980, the Soviets had increased the number of troops to 80,000. [redacted]

The incremental expenditures associated with the invasion—those costs that are over and above normal peacetime spending levels—amount to about half of the total. If Soviet operations continue at their present pace through 1980, these expenditures will account for about 5 percent of the increase in total defense spending between 1979 and 1980. The incremental expenditures include costs of the airlift of men and supplies, pay and allowances for some of the troops, including reservists, part of the O&M costs, and all construction costs. [redacted]

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[redacted] some obsolescent equipment was replaced with more modern types. [redacted]

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Between January and June the Soviets also expanded their military operations. In the early weeks following the invasion, Soviet forces established their basing and security arrangements. [redacted]

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Several factors have combined to minimize the expenditures. For example:

- Soviet military operations have been limited in scope and areas of engagement.
- The Soviets have provided most of the logistical support for their forces by rail and road rather than the most costly alternative, air transportation.
- The enemy forces and the nature of their operations have not required a massive use of Soviet force and firepower.
- The Soviets replaced most of the reservists after the initial invasion and now rely chiefly on regular army personnel. [redacted]

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**Military Expenditures.** We have estimated Soviet military expenditures for the invasion of Afghanistan and military operations for the first six months, based on the number and types of forces we have identified—motorized rifle and airborne units from the Ground Forces and helicopters, fighters, and transports from Frontal (Tactical) Aviation. Our estimates of the costs include pay and allowances for the approximately 120,000 military personnel committed to the operations (that is, about 80,000 in Afghanistan and 40,000 in adjacent Soviet military districts), costs of operation and maintenance (O&M) of equipment, and some construction. [redacted]

**Other Military Costs.** Other military costs can be attributed to Afghanistan but have not yet been reflected in military outlays. These include the value of weapons and supplies for the Afghan Army, of Soviet equipment damaged or destroyed, and of ammunition expended. [redacted]

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We estimate total expenditures for the first six months of the Soviet involvement in Afghanistan to be on the order of 150 million rubles, or about 1 percent of the estimated total Soviet spending for ground and tactical air forces in 1980. This total, in turn, accounts for about 25 percent of estimated total Soviet spending for defense. Thus, the estimated expenditures for the invasion and

[redacted] We estimate that the cost of ammunition expended and equipment lost would be on the order of 100 to 200 million rubles; we are unable to estimate the costs of supplying the Afghans. [redacted]

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**Indirect Economic Costs.** The Soviets also have incurred some indirect economic costs because of the economic denial measures imposed by the United States after the invasion. These measures include a trade embargo on grain and on high-technology products, denial of fishing rights, and limits on Western credits. We do not know in the aggregate how high these indirect costs have been, but the Soviet economy has not been seriously affected either by the denial measures or by the diversion of resources to support the invasion. Nevertheless, it has experienced some dislocations. For example the military requirement for trucks in the Afghan operations, combined with the US trade embargo, has delayed deliveries of agricultural machinery. Some units in the USSR probably have experienced delays in military equipment deliveries because of equipment needs in Afghanistan. The grain embargo has reduced the availability of feed supplies and forced cutbacks in the livestock sector. [ ]

**Human Costs.** The human cost of the invasion cannot be estimated with confidence. A conservative calculation, based on fragmentary information, puts Soviet casualties at a minimum of 4,000. [ ]

[ ] The minimum figure, 4,000, represents about 5 percent of Soviet manpower in Afghanistan and a negligible portion of total Soviet military manpower. [ ]

**Soviet Perceptions.** Our estimates of the costs of Soviet operations in Afghanistan are small when compared with such aggregate measures as total defense spending, military manpower, or GNP. Nevertheless, it seems that the costs in both human and economic terms have been greater than the Soviets anticipated. This perception of the costs may have contributed to a reassessment of their situation. The military has restructured combat operations, though decisions about the composition and use of the armed forces seem to have been dictated primarily by military and political considerations. The Soviets, though, apparently still judge that the political costs of withdrawing outweigh all other costs. [ ]

### Estimated Costs of Larger Scale Involvement

**Postulated Scenarios.** Six months after the invasion, the Soviets found themselves with about 120,000 men committed to Afghanistan, a weak and inefficient Afghan Army as a military partner, and resilient rebel forces and popular unrest as threats. The Soviets have largely secured the two primary roads into Afghanistan by assigning many of their troops to route security missions. Cities where Soviet troops are garrisoned seem to be controlled by the Karmal government, although demonstrations and acts of violence occur frequently. Control over other roads and cities is tenuous, and the insurgents seem to control the countryside. To cope with this situation, the Soviets have had to reorganize their troops and adopt new tactics. [ ]

The Soviets show no sign of planning to withdraw major combat units from Afghanistan.<sup>3</sup> They probably intend to remain to stabilize the country politically and militarily. The level of manpower and resources required to achieve those goals cannot be predicted with confidence. Nevertheless, we have postulated three scenarios which incorporate increasing levels of manpower and resources over time. These scenarios are not forecasts of Soviet intentions; they serve only as bases for an assessment of the costs and economic effects of an increasingly large and lengthy Soviet occupation. [ ]

Our assumptions (presented in detail in the appendix) are as follows:

- Scenario I assumes a one-year effort by 150,000 Soviet troops who would be engaged in counter-insurgency and consolidation operations similar to those conducted in the first six months of 1980. With a force of this size the Soviets would try to maintain the status quo. They probably would not be able to end the insurgency or seal the borders.

<sup>3</sup> In late June 1980, the Soviets announced the withdrawal from Afghanistan of some units and equipment which they did not consider necessary for combat operations. We believe, however, that this action was not a major withdrawal. [ ]

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- Scenario II postulates a gradual buildup to 250,000. These Soviet forces would remain in Afghanistan for three years and would carry out widespread counterinsurgency operations, provide additional security for populated areas and lines of communication, patrol the borders, and maintain control over areas taken from the rebels.
- Scenario III assumes a long-term effort and a gradual increase over five years to 500,000 men. The Soviets would undertake aggressive and extensive campaigns to suppress the rebels, establish firm control over populated areas and the countryside, and seal the borders against the flow of people and supplies.

**Cost of the Scenarios.** Military expenditures for a force of 150,000 men in Afghanistan for one year (Scenario I) would entail only a small increase over what we estimate the Soviets are spending in 1980 for ground and tactical air forces. A Soviet contingent of 250,000 for three years (Scenario II) would result in an annual increment on the order of 10 percent over our current estimate, while a force of 500,000 men over an extended period of time (Scenario III) would result in an increase of about 25 percent annually. Table 1 shows the cost of these postulated operations.

Although investment and operating expenditures for ground and tactical air forces make up about 25 percent of total Soviet defense spending, the effect of the first two scenarios on overall defense spending would be small. The increase in total projected expenditures over the next five years under Scenario I would be negligible and under Scenario II would be about 3 percent. Scenario III, however, would entail an absolute increase of slightly over 5 percent and would raise the rate of growth of total defense spending about 1 percent—assuming that all other elements of defense expenditures continued to grow at their current long-term rate of 4 to 5 percent a year.

The increases in annual defense spending in Scenarios II and III would absorb a large share of the estimated annual increments to Soviet defense spending. See-

**Table 1**

Percent

### Costs of Postulated Soviet Operations in Afghanistan (1980-85) <sup>1</sup>

	Scenarios (numbers of men)		
	I (150,000)	II (250,000)	III (500,000)
Increase in spending for ground and air forces, of which:	1	10	25
Personnel	Less than 5	5	15
Procurement	None	15	40
Operation and maintenance	Less than 1	5	10
Construction	10	40	50
Increase in total defense spending	NEGL	About 3	5

<sup>1</sup> This table shows the estimated increases in annual investment and operating spending for ground and tactical air forces and the estimated increase in total defense expenditures. Military research and development costs have been excluded because we assumed that few, if any, new systems could be developed over the next several years expressly for operations in Afghanistan. Modifications to existing equipment have not been factored in either.

nario I, like the cost of current operations, would account for only 5 percent of the increment. The increase in Scenario II, however, would amount to between 30 and 40 percent of the annual increment to defense spending in the next three years. Scenario III would absorb an estimated 50 to 60 percent of the annual defense spending increment over the next five years. These figures indicate that a large-scale, long-term Soviet occupation of Afghanistan could become a costly undertaking, absorbing increasing amounts of the resources devoted to defense.

### Economic Implications of Larger Scale Involvement

The effects of the postulated scenarios on defense spending represent only one measure of the total costs to the Soviet economy of an escalation of the conflict in Afghanistan. Higher defense spending

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would affect economic growth by diverting labor, capital, and materials from civilian uses. It could also cause localized disruptions in specific sectors of the economy. Other potential costs, whose effects are difficult to gauge, could be a more competitive strategic environment that could further increase pressure for stepped-up defense spending and perhaps an intensification of Western economic denial measures. [ ]

We cannot forecast precisely how these factors will affect the Soviet economy, or how Soviet leaders would weigh the economic costs of a larger scale involvement in Afghanistan against the political costs of withdrawal. We can, however, assess in general terms the opportunity costs of higher defense spending by using econometric models to calculate their impact on economic growth. We can also examine the likely effects of intensified military operations on critical sectors of the economy [ ]

[ ] our observation of Soviet behavior since the invasion give us some insights into Soviet perceptions of the costs of Afghanistan and into the possible role of these costs in future decisions. [ ]

**Implications for GNP Growth and Investment.** The rate of Soviet economic growth would not be affected significantly in the short run by any of the three scenarios, but all would affect the availability of economic resources for civilian uses. Even without an increase in the Soviet military commitment in Afghanistan, we expect defense to absorb a larger share of Soviet GNP—as much as 15 percent by 1985. If the Soviets expanded their forces along the lines of Scenarios II or III, the share could be greater by about one percentage point. Moreover, the defense share of the yearly increment to GNP would increase in the mid-1980s to more than four-fifths in Scenario III. Such an increase would reduce the flexibility of Soviet leaders to allocate additional resources to civilian investment and consumption. [ ]

Stepped-up military spending would affect investment most noticeably, because production of military hardware competes directly with production of machinery

and equipment for capital investment. Calculations based on Scenarios II and III show declines of about one-third of a percent in the share of GNP available for new capital investment. The long-term opportunity costs of such reductions could be considerable, given the Soviets' continuing requirement for investment in key sectors such as energy and in the economic infrastructure they need for exploiting natural resources in remote areas. [ ]

**Implications for the Transportation and Energy Sectors.** Since the invasion, the Soviets have relied primarily on road transportation to keep supplies and equipment flowing into Afghanistan. They have also moved some supplies by rail and some by air. We judge that transporting supplies and equipment to the border is not a major problem but that the distribution within Afghanistan is hindered by the lack of railroads and good secondary roads and by the rebels' interdiction of the existing transportation routes. [ ]

If the Soviets were to build up to the forces of Scenario II or III by moving men and supplies to the border by rail, they would face a difficult trade-off. Their railroad system is already operating at its maximum capacity, and not very efficiently. The burden placed on the system by the long distances traveled and large volume of freight carried within the USSR has led to a deterioration in railroad performance. Even minor disruptions in one area can lead to major dislocations across the nation. Thus, a reallocation of rolling stock from civilian to military requirements could severely disrupt the entire Soviet rail transportation system. This in turn could seriously affect other sectors of the economy. [ ]

If the buildup to support the higher force levels should be done by road, it would require between 500 and 2,000 truckloads a day. Trucks would have to be diverted from civilian uses, and truck production would have to be increased to support such an undertaking for an extended period. In theory the current road capacity in Afghanistan

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could accommodate such a movement of supplies, but it would preclude the use of the roads for Afghan civilian commerce or military purposes. The support of this amount of traffic, moreover, probably would require diversion of Soviet labor and materials to maintain existing roads in Afghanistan or to construct additional roads. [ ]

The Soviets have increased the capacity of petroleum, oil and lubricants (POL) supply points established within Afghanistan. This increase probably has provided Soviet forces an adequate supply to meet current operational demands, but we believe it would prove insufficient to support operations under Scenarios II and III. [ ]

At these higher force levels, additional POL requirements for ground and air operations could increase total direct consumption of fuel by the entire Soviet military establishment by as much as 5 percent. To obtain that amount of additional fuel, the Soviets would have to either lower the operating rates of all Soviet forces or draw POL supplies from the civilian economy, which is already experiencing fuel shortages. [ ]

Moreover, indirect military POL consumption (the petroleum that would be consumed in manufacturing military equipment) could increase by 5 to 10 percent. Overall, the share of Soviet petroleum output allocated to defense could be up to one-tenth larger because of the requirements imposed under Scenario III. This would not be a very large increase in the present defense share of total Soviet petroleum output, which is about 10 percent, but it would come when energy supplies are already threatening to constrain the USSR's economic growth. [ ]

In addition to the problem of procuring additional POL, the Soviets would face difficulties in their distribution. [ ]

[ ] The increase in the flow of POL required to support a large-scale involvement, and its effect on the distribution network, could delay deliveries of fuel needed on a timely basis. [ ]

**Implications for Industry.** The Soviet defense industries have enough final assembly plant capacity to support expanded weapon production for the forces in Scenarios II and III. (See the appendix for estimated production requirements.) In some plants an increase in military production would directly affect civilian production. For example, some military aircraft plants produce civilian transports, and almost all Soviet tank plants produce railroad rolling stock. Military production already accounts for a large share of the output of the metallurgical sector, and any increased demand for tanks, armored vehicles, and aircraft could upset production plans for civilian machinery and place increasing strain on the production of both ferrous and nonferrous metals. The poor performance of the economy in 1979 resulted in regional shortages of steel products and higher import requirements—problems that could be worsened by an unscheduled expansion of defense production. [ ]

The Soviets would be able to cushion the effects of the forces' greater demands on industry by diverting weapons produced for export to the Soviet military. This, however, could reduce hard currency earnings and political leverage with foreign military customers. [ ]

**Implications for the Labor Force.** To maintain their military forces at their present size, the Soviets probably will have to modify their manpower acquisition system by 1985. We expect demographic factors to reduce the Soviet draft pool by over 1 million between 1980 and 1985. Any absolute increase in the size of the armed forces over current levels will bring closer the time when changes in the conscription system will be necessary. [ ]

Over the next two or three years the Soviets could sustain the manpower increases necessary to keep 150,000 to 250,000 men in Afghanistan by increasing conscription rates. These are the forces postulated in Scenarios I and II. If they chose to raise the force level to 500,000 (Scenario III), they probably would add several months to the two-year term

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of service required of most conscripts. Two other options are possible but do not seem likely:

- Reliance on reservists or expansion of the number of civilians employed by the armed forces, or both. Given the labor problems now facing the USSR, we believe the Soviets probably would try to avoid any long-term diversion of manpower from civilian enterprises.
- Retention of more servicemen for extended periods. The Soviets would have to double the current reenlistment rates. In light of past failures to increase voluntary enlistment, such an increase probably would be hard to achieve. [REDACTED]

An extension of the military term of service to meet the requirements of Scenario III would be unpopular, but it would meet the needs of the military and would have little direct effect on overall economic growth. Although Soviet military manpower now makes up only 3 to 4 percent of the labor force, any large increase in military manpower will affect the size of the civilian labor force. The rate of growth of the Soviet labor force is expected to decline in the 1980s, and an increase in military manpower would aggravate this trend somewhat, even though the civilian labor force would continue to increase in absolute terms. [REDACTED]

#### **Economic Implications of an Intensified Military Competition**

A prolonged, large-scale Soviet presence in Afghanistan probably would not remain an isolated incident. It could worsen East-West relations and thus lead to pressure for an across-the-board increase in Soviet spending for defense. The size of the increase and the effect on the economy would depend on the international political climate and the pace of the intensified arms competition. Any increase in the growth of defense spending, however, could heighten Soviet economic problems—at a time when Soviet leaders are already showing increasing concern over their economic prospects. [REDACTED]

To estimate the costs of such a worsening of East-West relations, we postulated a worst case from the Soviet point of view. In this situation the Soviets would

find themselves deeply involved in Afghanistan (Scenario III) and also would face deteriorating relations with the United States. As a result there would be pressure to increase defense spending across the board, especially for strategic forces. [REDACTED]

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If the Soviets felt compelled to make such an increase, projected defense spending through 1985 would increase approximately 10 percent. This would bring about an increase of almost two percentage points in the average annual rate of growth of total defense spending and a reduction of about one-tenth of a percent in overall economic growth. Civilian uses of GNP would be substantially affected, and there could be a decline of one to two percentage points in the share of GNP allocated to capital investment. [REDACTED]

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#### **Possible Effect of Expanded Economic Denial Measures**

In considering the costs of a stepped-up military effort in Afghanistan, Soviet leaders would have to consider the possibility that the Western nations would intensify their economic denial measures. These measures—with the exception of the grain embargo—have had no noticeable impact on the Soviet economy. Their effect in the future would depend on the actions of the major grain-producing nations and the exporters of key technologies. If broadly supported and maintained for a prolonged period, economic denial measures could have a substantial effect on Soviet economic performance. [REDACTED]

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#### **Implications for Soviet Decisionmaking**

Our estimates indicate that the costs to the USSR of the first six months of their occupation of Afghanistan have been relatively small. The Soviet leaders, however, apparently perceive these costs as higher than expected. How this perception will affect their future actions remains closely tied to other Soviet political and strategic considerations. [REDACTED]

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The Soviet leaders probably believe, as we do, that their economy in the aggregate is large enough to support a substantial increase of military forces in Afghanistan. They also are aware, however, that critical problems exist in their economy and that sizable escalation of the conflict in Afghanistan over the next three to five years—even if carried out gradually—would exacerbate these problems. Soviet actions to date suggest that political and military considerations have dominated decisions on Afghanistan and that economic costs have been secondary. We do not know how the Soviets will weigh the economic costs of a continued occupation of Afghanistan against political and military factors. Nevertheless, as economic growth declines, the long-term costs of a lengthy, large-scale involvement are likely to become increasingly important in Soviet decision-making.

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## Appendix

### Methodology, Assumptions, and Confidence in the Estimates

#### Methodology

The estimates of Soviet defense spending presented in this paper are based primarily on direct costing—that is, first identifying individual components of the Soviet defense effort and then calculating the cost of each.

we compile a detailed list of the activities and physical components which make up the Soviet defense program for a given year. This list includes data on order of battle, manpower, production of equipment, construction of facilities, and operating rates for the Soviet military forces.

By a variety of methods this data base is converted into monetary estimates. For many components the data are costed directly in rubles; for others, we first estimate what it would cost to carry out the Soviet activities in the United States and then convert these dollar costs to ruble terms. The conversion factors are based on samples of prices of Soviet military equipment and activities.

Our methodology provides an estimate of the level of, and an indication of the real trend in, the annual Soviet resource commitment to military forces. We use ruble prices to reflect the relative prices of military programs and activities within the Soviet economic system. The estimates can be used to assess the resource constraints confronting Soviet military planners, the priorities they assign to the components of the defense effort, and the impact of defense programs on the Soviet economy. The estimates are presented in constant prices to reflect real changes in defense activities, excluding the effect of inflation. The base year is 1970.

In the

model, the capacity of the capital goods industries determines investment, which in turn establishes the pattern of growth in the stock of productive capital. This capital stock, together with demographically determined employment, sets the achievable level of production. This output is then divided among competing uses on the basis of availabilities and relative priorities, with private consumption generally taken as the residual claimant.

#### Assumptions

To analyze the costs of current Soviet activities in Afghanistan, we compiled a detailed description of the forces and operations.

For a detailed description of the assumptions for calculating the costs of a larger scale involvement, see table 2. We assumed that 40 percent of the Soviet forces in Afghanistan would be drawn from

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Table 2

## Postulated Soviet Force Options in Afghanistan

Scenario	I	II	III
Duration	1 year	3 years	5 years
Force size (men)	150,000	250,000	500,000
Force structure			
Units (personnel)			
Motorized rifle divisions	8 (100,000)	13 (162,500)	27 (337,500)
Airborne divisions	2 (14,200)	2 (14,200)	3 (21,300)
Air forces personnel	(11,000)	(23,000)	(27,300)
Command and support personnel	(27,000)	(50,000)	(115,000)
Equipment holdings/procurement			
Ground forces	Equipment increases proportional to the increase in the number of divisions. All equipment from existing stocks, not replaced.	New equipment procured for five newly created MRDs.	New equipment procured for 19 new MRDs.
Air forces	Minor increases in holdings of helicopters, fighters, and transport aircraft. No new procurement.	Aircraft numbers increased by about 80% over current levels; all new procurement.	Aircraft numbers increased by about 120% over current levels; all new procurement. Higher increases in percentage of helicopters and transports than of fighter aircraft.
Command and support	Equipment holdings proportional to number of men. No new procurement.	Same as Scenario I	Same as Scenario I
Activity levels			
Ground forces	Modeled after Group of Soviet Forces, Germany; full-strength units, high level of activity.	40% increase over Scenario I	100% increase over Scenario I
Air forces	Modeled after GSFG; active fighter, fighter-bomber, and helicopter units.	Same as Scenario I	Same as Scenario I
Command and support	Modeled after GSFG	Same as Scenario I	Same as Scenario I
Construction	Some barracks, POL storage, roads, limited infrastructure.	Barracks, support infrastructure, POL storage, roads, and fortification of existing facilities.	Same as Scenario II, plus an airfield.

Because of rounding, unit personnel figures do not add to totals.

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existing troops and that 60 percent would be new conscripts. We also assumed that in each of the scenarios the relative proportions of ground forces, air forces, and support personnel to total military personnel would be about the same as they are for the current force in Afghanistan. [REDACTED]

Likewise, we assumed that equipment holdings would increase in proportion to the numbers of personnel. No new equipment was procured to support the 150,000-man force of Scenario I; we assumed it was drawn from existing stocks. For the 250,000-man force of Scenario II, however, we assumed the procurement of about 350 aircraft and equipment for five motorized rifle divisions (MRDs). For 500,000 men, we included procurement of equipment for 19 MRDs, one airborne division, and more than 500 aircraft. We procured the equipment for the two larger forces because we judged that drawing this equipment from stocks or from existing units would decrease the overall state of readiness of the armed forces. [REDACTED]

The factors for calculating the operation and maintenance (O&M) costs of the ground and airborne forces equipment for the 150,000-man scenario were the same as those for current operations. For the scenarios involving 250,000 and 500,000 troops these factors were increased by 40 and 100 percent, respectively, to account for additional equipment use and repair. Factors for air forces O&M remained the same, however, because we believe the Soviets probably would not increase the rate of operation of their air elements significantly. O&M for command and support personnel also remained unchanged. [REDACTED]

Construction costs for the 150,000-man force were assumed to include barracks for some personnel (others would be housed in expropriated Afghan facilities), POL storage, roads, and limited infrastructure needs. For a 250,000-man force for three years, we assumed the construction of basic barracks and support infrastructure, POL storage, and roads and the fortification of existing facilities. For the 500,000-man scenario, we increased all of these construction categories and added the cost of an airfield. [REDACTED]

### Confidence in the Estimates

We have the highest confidence in our estimates of personnel cost. [REDACTED]

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[REDACTED] We also have confidence in the estimates of military procurement; [REDACTED]

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[REDACTED] We have less confidence in our cost estimates for construction, because we may not have identified all Soviet construction activity. Our methods for estimating the costs of operation and maintenance of weapon systems are less precise than those for the other components of the estimates, [REDACTED]

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[REDACTED] comprehensive examinations of the response properties of the model suggest that growth projections are sensitive to shifts in the distribution of investment and labor resources. The model is not designed, however, to evaluate the indirect effects of disruptions in some sectors, such as transportation, on overall economic growth. Thus, we believe the estimated effects of the defense scenarios examined in this paper provide reasonable indications of the resulting costs to the Soviet economy in the aggregate, but these costs probably tend to be understated and must be supplemented by analysis of key sectors of the economy. [REDACTED]

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